CITY OF CHUBBUCK (PWS 6030008)
SOURCE WATER ASSESSMENT FINAL REPORT

November 1, 2000

State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for the City of Chubbuck* describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Chubbuck drinking water system consists of five well sources. Tetrachloroethene has been detected in the water sampling efforts at each well source. The capture zones for the five wells intersect a Group 1 priority area for the volatile organic chemical Tetrachlorethene. This chemical is a colorless liquid, commonly used as a cleaning agent in dry cleaning and other textile industry applications.

Well #1 water has Tetrachloroethene concentrations ranging from no detection in August 1990 to 3.8 µg/L (Maximum Contaminant Level 5.0 µg/L) in August 1991. August 1997 through June 2000, the well records no detection of PERC at the well source. Well #2 water has Tetrachloroethene concentrations ranging from 3.3 µg/L in December 1990 to 19.4 µg/L in June 1997. In 1998 the well piping was disconnected from the distribution system, however, the pump still remains in the well. The city has no definite plans to permanently abandon the well. Well # 3 water has Tetrachloroethene concentrations ranging from 0.8 µg/L in November 1998 to 4.2 µg/L in August 1994 and October 1997. Well #4 water has Tetrachloroethene concentrations ranging from 7.3 µg/L in December 1998 to 12.7 µg/L in August 1995. In 1998 a ground water treatment system was installed at the well to address the Tetrachloroethene problem. Post-treatment water samples record no detection of Tetrachloroethene (December 1998, March 1999, June 1999, and June 2000) to 0.7µg/L (August and November 1999), and 0.9 µg/L in March 2000.

The potential contaminant sources within the delineation capture zones include underground and above ground storage tank facilities, small businesses which may use and store chemicals and organic materials, historical business such as old gas stations, auto repair and sales facilities, food processing facilities, and several manufacturing facilities. The final susceptibility ranking for the well #1 is low for inorganic contaminants, high for volatile organic contaminants and synthetic organic contaminants, and moderate for microbial contaminants. Well #2, Well #3, Well #4, and Well #5 rate moderate for inorganic contaminants, and microbial contaminants, and high for volatile organic and synthetic organic contaminants (Table 7).

For the City of Chubbuck, source water protection activities should focus on identifying the source of Tetrachlorethene contamination in the wells. Future well sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use. Management tools and activities can include regulatory approaches such as zoning ordinances, source prohibitions, and permits; or non-regulatory tools such as purchase of development rights or property, water conservation, and public education and information. In some cases, land uses within the source water assessment area are beyond the control of the City of Chubbuck. Therefore, partnerships with state and local agencies should be established to ensure future land uses are protective of ground water quality. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact Pocatello Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR CITY OF CHUBBUCK, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are contained in this report. The list of significant potential contaminant source categories and their rankings used to develop this assessment is also attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. DEQ recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of Chubbuck has a community public drinking water system serving approximately 9800 persons and is located in Bannock County (Figure 1). Residents receive their water from four well sources. The primary water quality issue currently facing the City of Chubbuck is the presence of Tetrachloroethene (PERC) in the well sources and possible volatile organic (VOCs) contaminants and synthetic organic (SOCs) contaminants from nearby underground storage tank facilities, and the problems associated with managing this contamination.

Defining the Zones of Contribution—Delineation

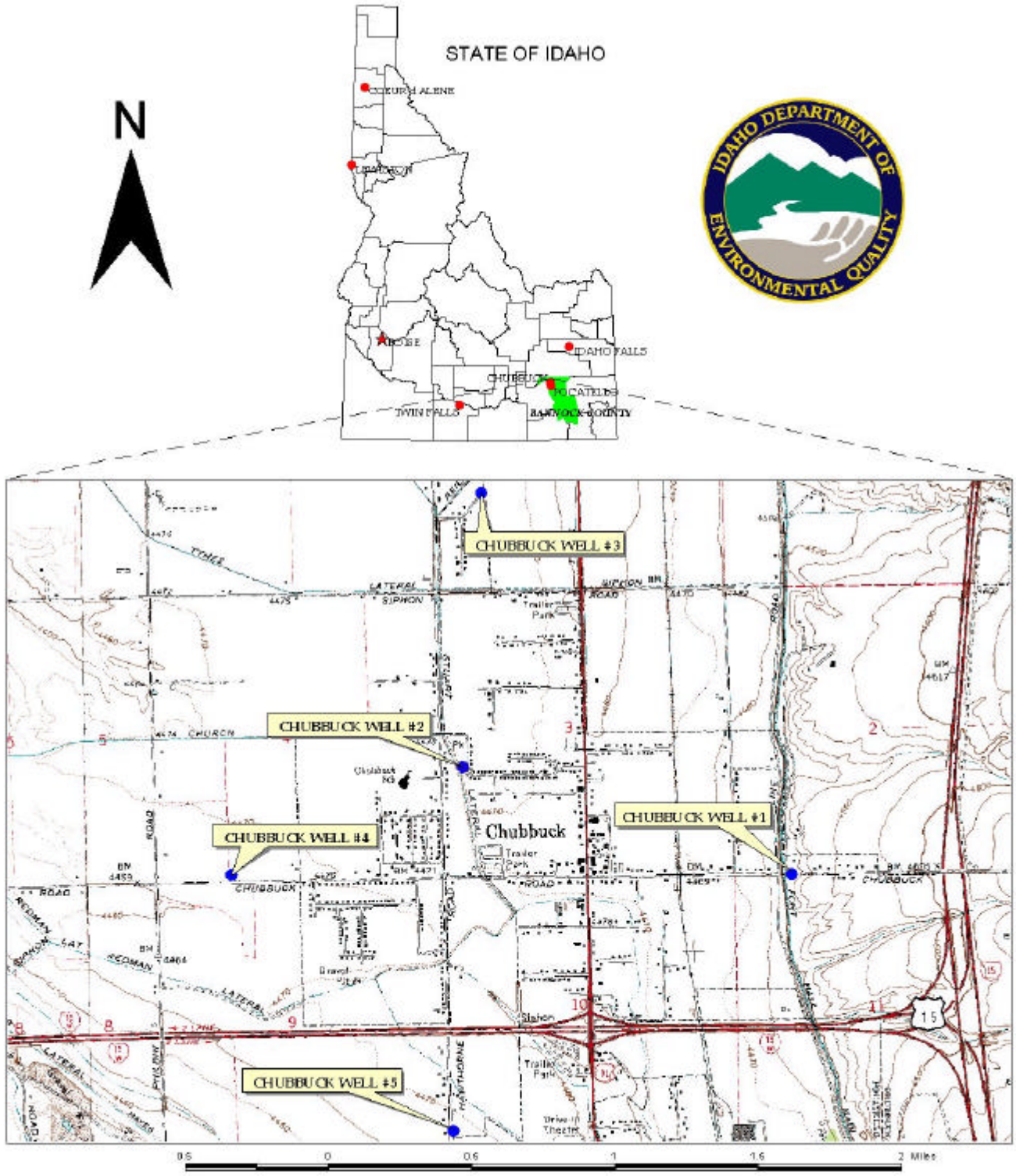
The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time of travel zones (zones indicating the number of years necessary for a particle of water to reach a pumping well) for water in the aquifer. Dr. John Welhan of the Idaho Geological Survey used analytical computer models approved by the EPA to determine the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) time of travel zones (TOT) for water associated with the Lower Portneuf River Area. The computer model used aquifer parameters, such as thickness and porosity, and well information, such as well discharge rate and estimates to calculate the capture zones. The well-specific information was derived from a variety of sources including sanitary surveys, local well logs, and operator records. The actual data used by Dr. Welhan in determining the zones of contribution are available upon request.

In some cases where the general source area or ambient direction of ground water flow for a well was unknown or could reasonably be assumed to be from two different directions and/or aquifer types, the zones of contribution were calculated for two different cases and both were mapped. For the City of Chubbuck, wells #1,#2,#3, & #4 draw water from the highly permeable Bonneville gravel aquifer in the lower Portneuf River valley. Well #5 is completed in a deep sedimentary aquifer but with capture zones reflecting uncertainty in the possible recharge sources contributing to the well.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

FIGURE 1 - Geographic Location of the City of Chubbuck Wells



It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted during the summer of 2000. The first phase involved identifying and documenting potential contaminant sources within the City of Chubbuck Source Water Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. The second or enhanced phase of the contaminant inventory involved contacting Mr. Steven Smart, City Public Works Director, to validate the sources identified in phase one and to add any additional potential sources in the areas.

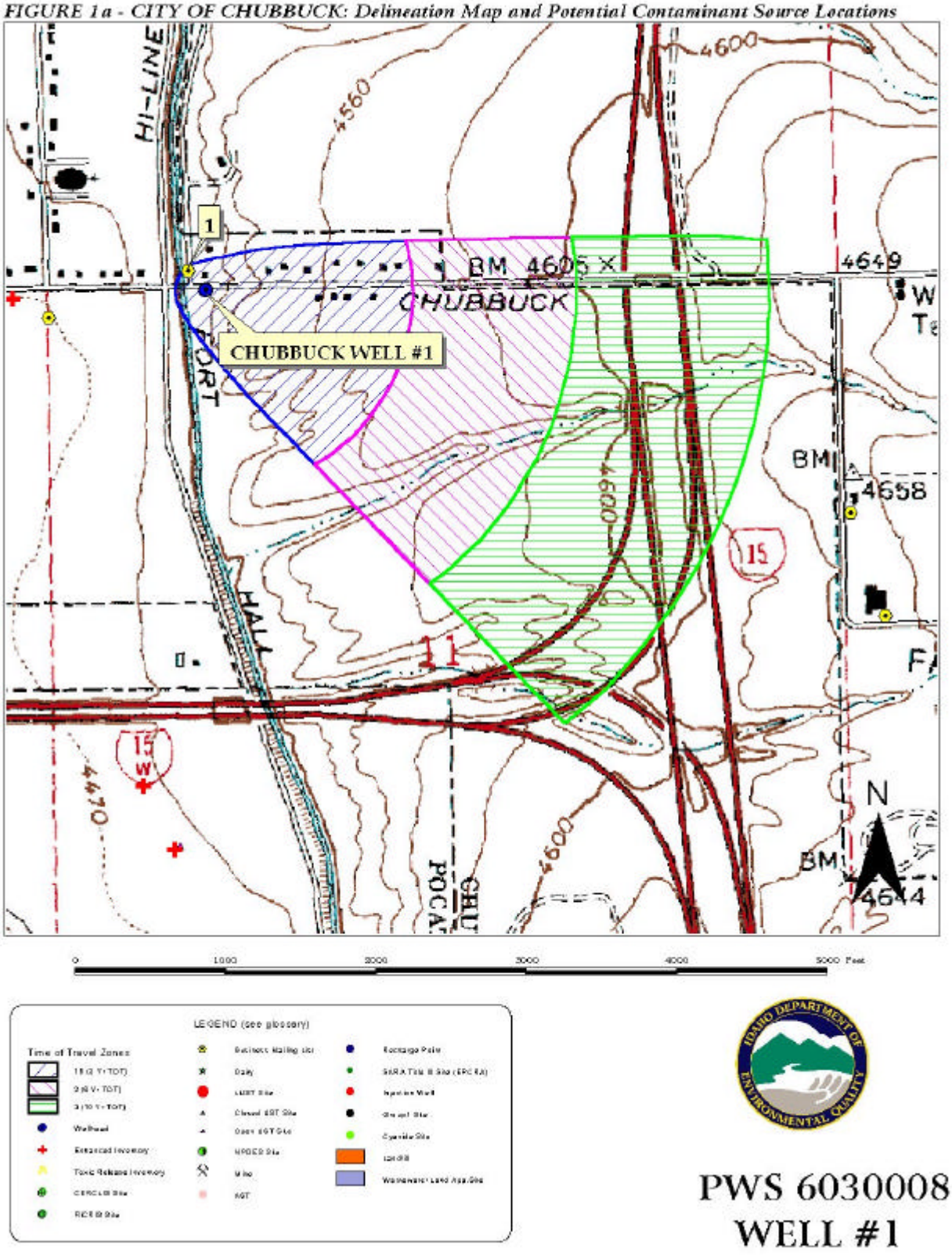
Well #1 has one potential contaminant source located in the delineated source areas. Well #2 has a total of 60 sources within the delineated source water areas. Well #3 has a total of 5 potential contaminant sources within the 3-6 year time of travel zone. Well #4 has a total of 57 potential sources within the delineated source water areas. Well # 5 has a total of 360 potential sources within the delineated source water areas. Some of these sources include underground and above ground storage tank facilities, small businesses which may use and store chemicals and organic materials, historical business such as old gas stations, auto repair and sales facilities, food processing facilities, and several manufacturing facilities (Figures 1, 1a, 2, 3, 4, 5, 5a, 5b1, 5b2, 5c1, 5c2, 5c2a, 5c2b, 5c2c). Contaminants of concern are primarily business chemicals such as petroleum products, solvents, degreasers, nitrates, acids, and creosote from preserving wood ties.

Table 1. City of Chubbuck Potential Contaminant Inventory for Well #1 (Figure 1a)

Site #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
1	Manufactures	0-3	Database Inventory	VOC, SOC

TOT = time of travel (in years) for a potential contaminant to reach the wellhead
VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 1a - CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



PWS 6030008
WELL #1

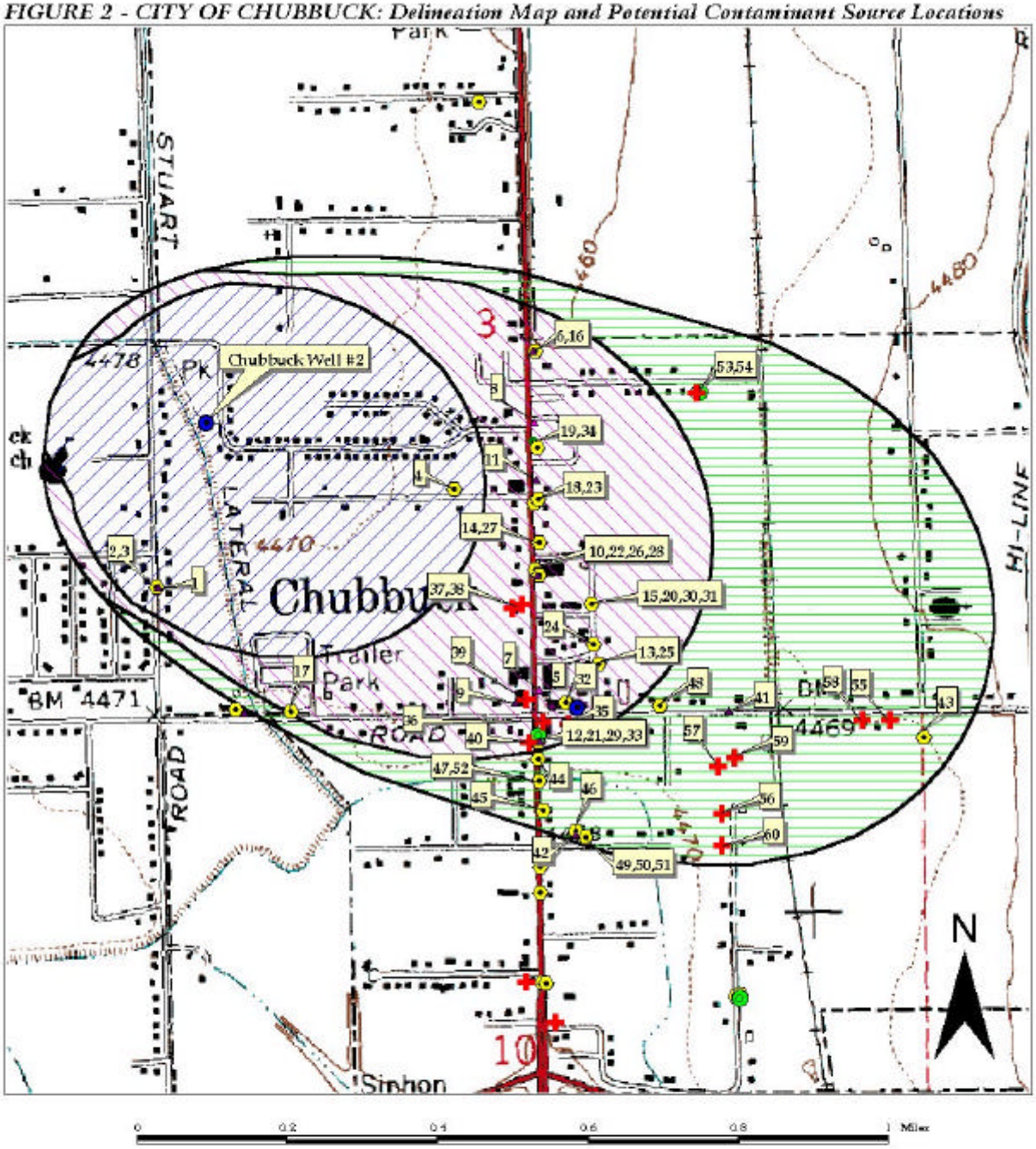
Table 2. City of Chubbuck Potential Contaminant Inventory for Well #2 (Figure 2)

Site #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
1	Former UST site	0-3	Database Inventory	VOC, SOC
2	Veterinarians	0-3	Database Inventory	IOC
3	Veterinarians	0-3	Database Inventory	IOC
4	Machine Shop	0-3	Database Inventory	VOC, SOC
5	Former UST site	3-6	Database Inventory	VOC, SOC
6	Former UST site	3-6	Database Inventory	VOC, SOC
7	UST Site	3-6	Database Inventory	VOC, SOC
8	UST Site	3-6	Database Inventory	VOC, SOC
9	Former UST site	3-6	Database Inventory	VOC, SOC
10	Former UST site	3-6	Database Inventory	VOC, SOC
11	Former UST site	3-6	Database Inventory	VOC, SOC
12	Former UST site	3-6	Database Inventory	VOC
13	Concrete Contractors	3-6	Database Inventory	VOC, SOC,
14	Wrecker Service	3-6	Database Inventory	VOC, SOC
15	Wrecker Service	3-6	Database Inventory	VOC, SOC
16	Local Government	3-6	Database Inventory	VOC, SOC
17	Electric Equipment & Supplies	3-6	Database Inventory	VOC
18	Commercial Printing	3-6	Database Inventory	VOC
19	Excavating Contractors	3-6	Database Inventory	VOC, SOC
20	Automobile Parts & Supplies	3-6	Database Inventory	VOC, SOC
21	Automobile Dealers-	3-6	Database Inventory	VOC, SOC
22	Mobile Homes-Repairing & Service	3-6	Database Inventory	VOC, SOC
23	Motorcycles & Motor Scooters – Repair	3-6	Database Inventory	VOC, SOC
24	General Contractors	3-6	Database Inventory	VOC, SOC
25	Pumps	3-6	Database Inventory	VOC, VOC
26	Mobile Homes-Transporting	3-6	Database Inventory	VOC, SOC
27	Recreational Vehicles	3-6	Database Inventory	VOC, SOC
28	Automotive Parts & Supplies	3-6	Database Inventory	VOC, SOC
29	Automobile Repairing & Service	3-6	Database Inventory	VOC, SOC
30	Auto Towing Company	3-6	Database Inventory	VOC, SOC
31	Auto Repair Shop	3-6	Database Inventory	VOC, SOC
32	Auto Repair Shop	3-6	Database Inventory	VOC, SOC
33	UST site	3-6	Database Inventory	VOC, SOC
34	UST site	3-6	Database Inventory	VOC, SOC
35	Electrical & Plumbing Supply Co.	3-6	Enhanced Inventory	VOC
36	Photography Shop	3-6	Enhanced Inventory	IOC, VOC
37	Auto Parts & Supplies	3-6	Enhanced Inventory	VOC, SOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
38	RV Sales & Service	3-6	Enhanced Inventory	VOC, SOC
39	Photo Copy	3-6	Enhanced Inventory	IOC, VOC
40	Water Purification & Softening	3-6	Enhanced Inventory	IOC
41	Former UST site	6-10	Database Inventory	VOC, SOC
42	Former UST site	6-10	Database Inventory	VOC, SOC
43	General Contractors	6-10	Database Inventory	VOC, SOC
44	Fire Department	6-10	Database Inventory	VOC, SOC
45	Auto Service	6-10	Database Inventory	VOC, SOC
46	Manufacturers	6-10	Database Inventory	VOC, SOC
47	Wrecker Service	6-10	Database Inventory	VOC, SOC
48	Landscape Contractors	6-10	Database Inventory	IOC, SOC
49	Wrecker Service	6-10	Database Inventory	VOC, SOC
50	Automobile Repairing & Service	6-10	Database Inventory	VOC, SOC
51	Snowmobile Dealer	6-10	Database Inventory	VOC, SOC
52	Truck Renting & Leasing	6-10	Database Inventory	VOC, SOC
53	Metal Finishing	6-10	Database Inventory	VOC
54	Boat & Machine Sales	6-10	Enhanced Inventory	VOC, SOC
55	Salvage Storage	6-10	Enhanced Inventory	VOC, SOC
56	General Contractor	6-10	Enhanced Inventory	VOC, SOC
57	UST site	6-10	Enhanced Inventory	VOC, SOC
58	Hydraulic Repair Shop	6-10	Enhanced Inventory	VOC, SOC
59	Auto Body Repair & Painting	6-10	Enhanced Inventory	VOC, SOC
60	Cabinet Building & Finishing	6-10	Enhanced Inventory	VOC, SOC

UST = underground storage tank,
TOT = time of travel (in years) for a potential contaminant to reach the wellhead
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 2 - CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



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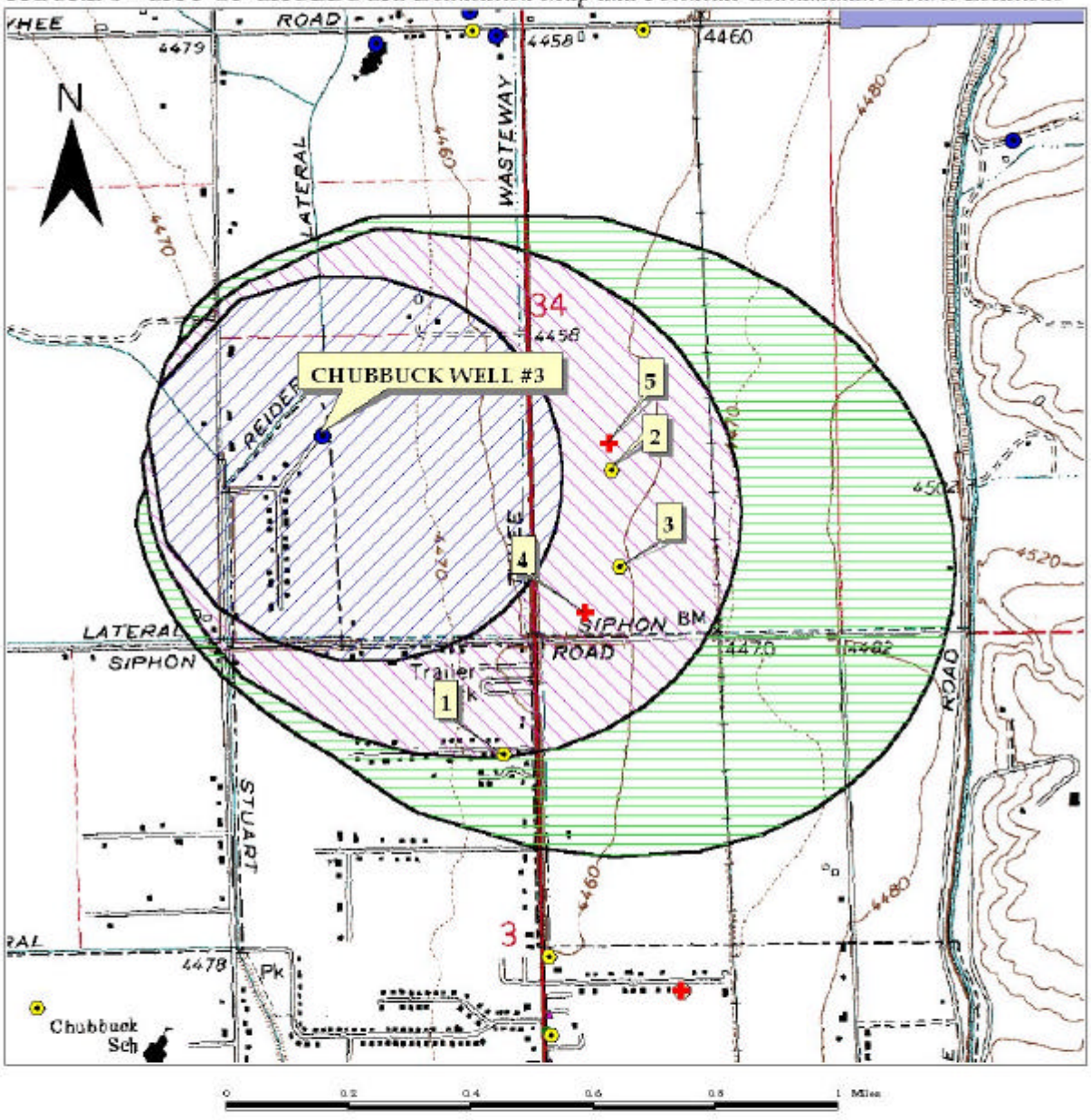
WELL #2

Table 3. City of Chubbuck Potential Contaminant Inventory for Well #3 (Figure 3)

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
1	General Contractors	3-6	Database Inventory	VOC, SOC
2	Utility Company	3-6	Database Inventory	IOC, VOC, SOC
3	Steel Fabricators	3-6	Database Inventory	VOC, SOC
4	Metal Manufacturing	3-6	Enhanced Inventory	VOC, SOC
5	Heavy Equip. Repair	3-6	Enhanced Inventory	VOC, SOC

UST = underground storage tank,
TOT = time of travel (in years) for a potential contaminant to reach the wellhead
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 3 - CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



PWS 6030008
WELL #3

Table 4. City of Chubbuck Potential Contaminant Inventory for Well #4 (Figure 4)

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
1	UST site	0-3	Database Inventory	VOC, SOC
2	Former UST site	0-3	Database Inventory	VOC, SOC
3	UST site	0-3	Database Inventory	VOC, SOC
4	UST site	0-3	Database Inventory	VOC, SOC
5	UST site	0-3	Database Inventory	VOC, SOC
6	Carpet Cleaners	0-3	Database Inventory	VOC
7	Auto Repair and Paint	0-3	Database Inventory	VOC, SOC
8	Auto Dealer	0-3	Database Inventory	VOC, SOC
9	Commercial Painters	0-3	Database Inventory	VOC
10	Dental Laboratories	0-3	Database Inventory	IOC
11	Service Station Equip.	0-3	Database Inventory	VOC, SOC
12	Commercial Storage	0-3	Database Inventory	IOC, VOC, SOC
13	Auto Repair and Paint	0-3	Database Inventory	VOC, SOC
14	Photographers	0-3	Database Inventory	IOC, VOC
15	Lawn Mowers	0-3	Database Inventory	VOC, SOC
16	Phosphate Manufacture	0-3	Database Inventory	IOC
17	General Contractors	0-3	Database Inventory	VOC, SOC
18	Auto Repair	0-3	Database Inventory	VOC, SOC
19	Chemical and Allied Products	0-3	Database Inventory	IOC, VOC, SOC
20	Retail Store	0-3	Database Inventory	VOC, SOC
21	Sand & Gravel Mine	0-3	Database Inventory	VOC, SOC
22	Chemical and Allied Products	0-3	Database Inventory	IOC, VOC, SOC
23	Retail Salvage	0-3	Database Inventory	VOC, SOC
24	UST site	0-3	Enhanced Inventory	VOC, SOC
25	UST site	3-6	Database Inventory	VOC, SOC
26	UST site	3-6	Database Inventory	VOC, SOC
27	Former UST site	3-6	Database Inventory	VOC, SOC
28	UST site	3-6	Database Inventory	VOC, SOC
29	UST site	3-6	Database Inventory	VOC, SOC
30	Former UST site	3-6	Database Inventory	VOC, SOC
31	UST site	3-6	Database Inventory	VOC, SOC
32	Former UST site	3-6	Database Inventory	VOC, SOC
33	Former UST site	3-6	Database Inventory	VOC, SOC
34	General Contractors	3-6	Database Inventory	VOC, SOC
35	Tire Dealer	3-6	Database Inventory	VOC, SOC
36	UST site	3-6	Database Inventory	VOC, SOC
37	Mechanical Contractors	3-6	Database Inventory	VOC, SOC
38	Trade Fairs and Shows	3-6	Database Inventory	VOC, SOC
39	Fish Bait Manufacture	3-6	Database Inventory	VOC, SOC
40	UST site	3-6	Database Inventory	VOC, SOC
41	Retail Paint Store	3-6	Database Inventory	VOC
42	Car Washing & Polishing	3-6	Database Inventory	VOC
43	Insect Control	3-6	Database Inventory	IOC, SOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
44	Tree Service	3-6	Database Inventory	VOC, SOC
45	Welding Equip & Supply	3-6	Database Inventory	VOC, SOC
46	Federal Government	3-6	Database Inventory	VOC, SOC
47	Retail Grocery	3-6	Database Inventory	VOC
48	UST site	3-6	Database Inventory	VOC, SOC
49	Food Processing Plant	3-6	Enhanced Inventory	IOC, Microbial
50	Auto Dealership	3-6	Enhanced Inventory	VOC, SOC
51	Building Supplies	3-6	Enhanced Inventory	VOC, SOC
52	UST site	6-10	Database Inventory	VOC, SOC
53	General Contractor	6-10	Database Inventory	VOC, SOC
54	General Contractor	6-10	Database Inventory	VOC, SOC
55	Janitor Service	6-10	Database Inventory	IOC
56	Computer Misc	6-10	Database Inventory	VOC
57	Copper Mine	6-10	Database Inventory	VOC, IOC, SOC

UST = underground storage tank,
TOT = time of travel (in years) for a potential contaminant to reach the wellhead
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 5. City of Chubbuck Potential Contaminant Inventory for Well #5 (Figures 5a, 5b1, 5b2, 5c1, 5c2, 5c2a, 5c2b, 5c2c)

Site #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
1	LUST site	0-3	Database Inventory	VOC, SOC
2	UST site	0-3	Database Inventory	VOC, SOC
3	UST site	0-3	Database Inventory	VOC, SOC
4	Former UST site	0-3	Database Inventory	VOC, SOC
5*	Former UST site	0-3	Database Inventory	VOC, SOC
6	Former UST site	0-3	Database Inventory	VOC, SOC
7*	UST site	0-3	Database Inventory	VOC, SOC
8	Former UST site	0-3	Database Inventory	VOC, SOC
9	Former UST site	0-3	Database Inventory	VOC, SOC
10*	Former UST site	0-3	Database Inventory	VOC, SOC
11*	UST site	0-3	Database Inventory	VOC, SOC
12	Former UST site	0-3	Database Inventory	VOC, SOC
13	Former UST site	0-3	Database Inventory	VOC, SOC
14	Former UST site	0-3	Database Inventory	VOC, SOC
15	Former UST site	0-3	Database Inventory	VOC, SOC
16*	UST site	0-3	Database Inventory	VOC, SOC
17	Former UST site	0-3	Database Inventory	VOC, SOC
18	Former UST site	0-3	Database Inventory	VOC, SOC
19	Former UST site	0-3	Database Inventory	VOC, SOC
20	Former UST site	0-3	Database Inventory	VOC, SOC
21*	Auto Repair & Service	0-3	Database Inventory	VOC, SOC
22	Veterinarians	0-3	Database Inventory	IOC
23	Carpet & Rug Cleaners	0-3	Database Inventory	VOC
24	Bicycles-Dealers	0-3	Database Inventory	VOC
25	Veterinarians	0-3	Database Inventory	IOC
26	Automobile Dealers	0-3	Database Inventory	VOC
27	Steel Fabricators	0-3	Database Inventory	VOC, SOC
28	Manufacturer	0-3	Database Inventory	VOC, SOC
29	Tire-Dealers	0-3	Database Inventory	VOC, SOC
30	Building Contractors	0-3	Database Inventory	VOC, SOC
31	Automobile Dealers-	0-3	Database Inventory	VOC, SOC
32	Photographers-Commercial	0-3	Database Inventory	IOC, VOC
33	Hardware-Manufacturers	0-3	Database Inventory	VOC, SOC
34	Electric Motors-Dealers/Repairing	0-3	Database Inventory	VOC
35	Service Station Equipment	0-3	Database Inventory	VOC, SOC
36	Automobile Repairing & Service	0-3	Database Inventory	VOC, SOC
37	Automobile Lubrication Service	0-3	Database Inventory	VOC, SOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
38	Oils-Waste (Wholesale)	0-3	Database Inventory	VOC, SOC
39	Veterinarians	0-3	Database Inventory	IOC
40	Veterinarians (see mapid 41)	0-3	Database Inventory	IOC
41*	Veterinarians (see mapid 40	0-3	Database Inventory	IOC
42	Painters	0-3	Database Inventory	VOC
43	Trailers-Truck (Wholesale	0-3	Database Inventory	VOC, SOC
44*	Laboratories-Testing (see mapid 5,74)	0-3	Database Inventory	IOC, Microbial
45	Automobile Repairing & Service	0-3	Database Inventory	VOC, SOC
46*	Photographers-Portrait (see mapid 10,75)	0-3	Database Inventory	IOC, VOC
47	Tire-Dealers	0-3	Database Inventory	VOC, SOC
48	Trucking-Motor Freight	0-3	Database Inventory	VOC, SOC
49	Automobile Parts & Supplies	0-3	Database Inventory	VOC, SOC
50	Fishing Bait-Manufacturers	0-3	Database Inventory	VOC, Microbial
51	Painters	0-3	Database Inventory	VOC
52*	Steel Fabricators (See mapid 6)	0-3	Database Inventory	VOC
53	Automobile Dealers	0-3	Database Inventory	VOC, SOC
54	Electric Motors-Dealers/Repairing	0-3	Database Inventory	VOC
55	Industrial Equipment & Supplies	0-3	Database Inventory	VOC
56*	UST site	0-3	Database Inventory	VOC, SOC
57	Paint Sales and Supplies	0-3	Database Inventory	VOC
58	Delivery Service	0-3	Database Inventory	VOC, SOC
59	Automobile Dealers	0-3	Database Inventory	VOC, SOC
60	Glass Coating & Tinting	0-3	Database Inventory	VOC
61	Car Washing & Polishing	0-3	Database Inventory	VOC
62*	Automobile Dealers (see mapid 20)	0-3	Database Inventory	VOC, SOC
63*	Transformers-Wholesale (see mapid 79)	0-3	Database Inventory	VOC, SOC
64	Automobile Rent & Leasing	0-3	Database Inventory	VOC, SOC
65*	Welding Equipment & Supplies (see mapid 18)	0-3	Database Inventory	VOC, SOC
66*	Federal Government-N Security (see mapid 13)	0-3	Database Inventory	VOC, SOC
67	Federal Government-National Security	0-3	Database Inventory	VOC, SOC
68	Trucking-Motor Freight	0-3	Database Inventory	VOC, SOC
69	Electric Motors-Dealers/Repairing	0-3	Database Inventory	VOC
70	Movers	0-3	Database Inventory	VOC
71	Electric Equipment	0-3	Database Inventory	VOC, SOC
72	Manufacturing	0-3	Database Inventory	VOC, SOC
73	Manufacturing	0-3	Database Inventory	VOC, SOC
74	Lab Processing	0-3	Database Inventory	IOC, Microbial

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
75	Retail Store	0-3	Database Inventory	VOC, SOC
76	Manufacturing	0-3	Database Inventory	VOC, SOC
77	Radiator Shop	0-3	Database Inventory	VOC, SOC
78	Manufacturing	0-3	Database Inventory	VOC, SOC
79	Manufacturing	0-3	Database Inventory	VOC, SOC
80	School District	0-3	Database Inventory	VOC, SOC
81	UST site (see mapid 16)	0-3	Database Inventory	VOC, SOC
82	Groceries , General Line (see mapid 11)	0-3	Database Inventory	IOC, VOC, Microbial
83	Former LUST site (see mapid 92)	3-6	Database Inventory	VOC, SOC
84	Former LUST site	3-6	Database Inventory	VOC, SOC
85	LUST site (see mapid 107)	3-6	Database Inventory	VOC, SOC
86	LUST site	3-6	Database Inventory	VOC, SOC
87	LUST site (see mapid 106)	3-6	Database Inventory	VOC, SOC
88	Former UST site	3-6	Database Inventory	VOC, SOC
89	UST site (see mapid 139)	3-6	Database Inventory	VOC, SOC
90	Former UST site	3-6	Database Inventory	VOC, SOC
91*	Former UST site (see mapid 165)	3-6	Database Inventory	VOC, SOC
92*	Former UST site (see mapid 83)	3-6	Database Inventory	VOC, SOC
93	Former UST site	3-6	Database Inventory	VOC, SOC
94*	Former UST site (see mapid 159,164)	3-6	Database Inventory	VOC, SOC
95	UST site	3-6	Database Inventory	VOC, SOC
96	Former UST site	3-6	Database Inventory	VOC, SOC
97	Former UST site	3-6	Database Inventory	VOC, SOC
98	Former UST site	3-6	Database Inventory	VOC, SOC
99*	Former UST site (see mapid 84)	3-6	Database Inventory	VOC, SOC
100	UST site (see mapid 122)	3-6	Database Inventory	VOC, SOC
101	Former UST site	3-6	Database Inventory	VOC, SOC
102	UST site	3-6	Database Inventory	VOC, SOC
103	Former UST site	3-6	Database Inventory	VOC, SOC
104	Former UST site	3-6	Database Inventory	VOC, SOC
105	UST site (see mapid 149)	3-6	Database Inventory	VOC, SOC
106*	Former UST site (see mapid 87)	3-6	Database Inventory	VOC, SOC
107*	Former UST site (see mapid 85)	3-6	Database Inventory	VOC, SOC
108	UST site	3-6	Database Inventory	VOC, SOC
109	UST site	3-6	Database Inventory	VOC, SOC
110	Automobile Dealers-	3-6	Database Inventory	VOC, SOC
111	Generators-Electric (Wholesale	3-6	Database Inventory	VOC
112	Tire-Dealers-Retail	3-6	Database Inventory	VOC, SOC
113	Photographers-Portrait	3-6	Database Inventory	VOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
114	Signs (Manufacturing)	3-6	Database Inventory	VOC, SOC
115	Christmas Trees	3-6	Database Inventory	IOC, VOC, SOC
116*	Oils-Fuel (Wholesale) (see mapid 165)	3-6	Database Inventory	VOC, SOC
117	Wheel Alignment-Frame & Axle Syc-A	3-6	Database Inventory	VOC
118	Farm Supplies (Wholesale)	3-6	Database Inventory	IOC, VOC, SOC
119	Printers	3-6	Database Inventory	VOC
120	Hardware-Retail	3-6	Database Inventory	IOC, VOC
121	Wrecker Service	3-6	Database Inventory	VOC, SOC
122*	UST Site (see mapid 100)	3-6	Database Inventory	VOC, SOC
123	Automobile Repairing & Service	3-6	Database Inventory	VOC, SOC
124	Electric Equipment & Supplies (Wholesale)	3-6	Database Inventory	VOC
125	Automobile Rent & Leasing	3-6	Database Inventory	VOC, SOC
126*	Cleaners (see mapid 157)	3-6	Database Inventory	VOC, SOC
127	Photo Finishing Retail	3-6	Database Inventory	IOC, VOC
128	Photo Finishing Retail	3-6	Database Inventory	IOC, VOC
129*	Contractors-Equipment & Supplies-Rent (see mapid 84)	3-6	Database Inventory	VOC, SOC
130	Refractories	3-6	Database Inventory	VOC
131	Hospitals	3-6	Database Inventory	IOC, VOC, Microbials
132	Jewelry Manufaturers	3-6	Database Inventory	VOC
133	Photo Finishing	3-6	Database Inventory	IOC, VOC
134	Landscape Contractors	3-6	Database Inventory	IOC, VOC
135	General Contractors	3-6	Database Inventory	VOC, SOC
136	Trade Fairs & Shows	3-6	Database Inventory	VOC, SOC
137	Flags & Banners (Manufacturers)	3-6	Database Inventory	VOC, SOC
138	Pilot Car Service	3-6	Database Inventory	VOC, SOC
139*	UST site (see mapid 89)	3-6	Database Inventory	VOC, SOC
140	Motorcycles & Motor Scooter- Supply	3-6	Database Inventory	VOC, SOC
141	Parking Area Maintenance & Marking	3-6	Database Inventory	VOC, SOC
142	Automobile Repairing & Service	3-6	Database Inventory	VOC, SOC
143	Automobile Body-Repairing & Painting	3-6	Database Inventory	VOC, SOC
144	Cutlery-Manufacturers (Tableware)	3-6	Database Inventory	VOC
145	Automobile Parts-Used & Rebuilt (Wholesale)	3-6	Database Inventory	VOC, SOC
146	Automobile Repairing & Service	3-6	Database Inventory	VOC, SOC
147	Janitor Service	3-6	Database Inventory	IOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
148	Spraying-Insect Control	3-6	Database Inventory	IOC, SOC
149*	Car Washing & Polishing (see mapid 105)	3-6	Database Inventory	VOC
150	Glass Coating & Tinting	3-6	Database Inventory	VOC
151	Hardware-Retail	3-6	Database Inventory	VOC, SOC
152	Tree Service	3-6	Database Inventory	VOC, SOC
153*	Transmissions-Automobile (see mapid 162)	3-6	Database Inventory	VOC, SOC
154*	Truck Renting & Leasing (see mapid 90)	3-6	Database Inventory	VOC, SOC
155	Laundries	3-6	Database Inventory	IOC, VOC
156*	UST site (see mapid 165)	3-6	Database Inventory	VOC, SOC
157	Cleaners (see mapid 126)	3-6	Database Inventory	VOC, SOC
158	Dry Cleaners	3-6	Database Inventory	VOC
159*	Retail Store (see mapid 94,164)	3-6	Database Inventory	VOC, SOC
160	Local Business	3-6	Database Inventory	VOC, SOC
161	Auto Service	3-6	Database Inventory	VOC, SOC
162	Auto Repair	3-6	Database Inventory	VOC, SOC
163	School District	3-6	Database Inventory	VOC, SOC
164	Retail Store (see mapid 94,159)	3-6	Database Inventory	VOC, SOC
165	AST, UST (see mapid 91,116,156)	3-6	Database Inventory	VOC, SOC
166	UST site	3-6	Database Inventory	VOC, SOC
167	AST	3-6	Database Inventory	VOC, SOC
168	AST	3-6	Database Inventory	VOC, SOC
169	Former LUST site (see mapid 181)	6-10	Database Inventory	VOC, SOC
170	Former LUST site (see mapid 180)	6-10	Database Inventory	VOC, SOC
171	Former LUST site (see mapid 180)	6-10	Database Inventory	VOC, SOC
172	Former LUST site	6-10	Database Inventory	VOC, SOC
173	Former LUST site (see mapid 215)	6-10	Database Inventory	VOC, SOC
174*	UST site (see mapid 170)	6-10	Database Inventory	VOC, SOC
175	Former UST site	6-10	Database Inventory	VOC, SOC
176	Former UST site (see mapid 255)	6-10	Database Inventory	VOC, SOC
177	Former UST site	6-10	Database Inventory	VOC, SOC
178	Former UST site	6-10	Database Inventory	VOC, SOC
179	UST site	6-10	Database Inventory	VOC, SOC
180*	Former UST site (see mapid 171)	6-10	Database Inventory	VOC, SOC
181*	Former UST site (see mapid 169)	6-10	Database Inventory	VOC, SOC
182	UST site (see mapid 314,359)	6-10	Database Inventory	VOC, SOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
183	UST site	6-10	Database Inventory	VOC, SOC
184	Former UST site (see mapid 360)	6-10	Database Inventory	VOC, SOC
185	Former UST site	6-10	Database Inventory	VOC, SOC
186*	UST site (see mapid 358)	6-10	Database Inventory	VOC, SOC
187	Former UST site	6-10	Database Inventory	VOC, SOC
188	UST site	6-10	Database Inventory	VOC, SOC
189	Former UST site	6-10	Database Inventory	VOC, SOC
190	Former UST site (see mapid 322)	6-10	Database Inventory	VOC, SOC
191	Former UST site	6-10	Database Inventory	VOC, SOC
192	Former UST site	6-10	Database Inventory	VOC, SOC
193	Former UST site	6-10	Database Inventory	VOC, SOC
194	Former UST site	6-10	Database Inventory	VOC, SOC
195	Former UST site	6-10	Database Inventory	VOC, SOC
196	UST site	6-10	Database Inventory	VOC, SOC
197	UST site	6-10	Database Inventory	VOC, SOC
198	UST site	6-10	Database Inventory	VOC, SOC
199*	UST site (see mapid 355)	6-10	Database Inventory	VOC, SOC
200	Former UST site	6-10	Database Inventory	VOC, SOC
201	Former UST site	6-10	Database Inventory	VOC, SOC
202	Former UST site	6-10	Database Inventory	VOC, SOC
203	UST site (see mapid 301)	6-10	Database Inventory	VOC, SOC
204	Former UST site	6-10	Database Inventory	VOC, SOC
205	UST site	6-10	Database Inventory	VOC, SOC
206	Former UST site	6-10	Database Inventory	VOC, SOC
207	Former UST site	6-10	Database Inventory	VOC, SOC
208	Former UST site	6-10	Database Inventory	VOC, SOC
209	Former UST site	6-10	Database Inventory	VOC, SOC
210	Former UST site	6-10	Database Inventory	VOC, SOC
211	Former UST site	6-10	Database Inventory	VOC, SOC
212	Former UST site	6-10	Database Inventory	VOC, SOC
213	Former UST site	6-10	Database Inventory	VOC, SOC
214	Former UST site	6-10	Database Inventory	VOC, SOC
215*	Former UST site (see mapid 173)	6-10	Database Inventory	VOC, SOC
216	Photographic Equipment-Repairing	6-106-10	Database Inventory	IOC, VOC
217	Veterinarians	6-10	Database Inventory	IOC
218	Ambulance Service	6-10	Database Inventory	VOC, SOC
219	General Contractors	6-10	Database Inventory	VOC, SOC
220	Photographers-Portrait	6-10	Database Inventory	IOC, VOC
221	Automobile Parts & Supplies	6-10	Database Inventory	VOC, SOC
222	County Government – Transportation Program	6-10	Database Inventory	VOC, SOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
223	Automobile Dealers-	6-10	Database Inventory	VOC, SOC
224	Automobile Repairing & Service	6-10	Database Inventory	VOC, SOC
225*	Automobile Repairing & Service (see mapid 204)	6-10	Database Inventory	VOC, SOC
226	General Contractors	6-10	Database Inventory	VOC, SOC
227	General Contractors	6-10	Database Inventory	VOC, SOC
228	Automobile Dealers	6-10	Database Inventory	VOC, SOC
229	Automobile Repairing & Service	6-10	Database Inventory	VOC, SOC
230	Automobile Renting & Leasing	6-10	Database Inventory	VOC, SOC
231	Automobile Dealers	6-10	Database Inventory	VOC, SOC
232	Storage-Household & Commercial	6-10	Database Inventory	IOC, VOC, SOC
233	Funeral Directors	6-10	Database Inventory	IOC
234	Electric Equipment & Supplies – Wholesale	6-10	Database Inventory	VOC
235	UST site	6-10	Database Inventory	VOC, SOC
236	Automobile Body-Repairing & Painting	6-10	Database Inventory	VOC, SOC
237	Automobile Parts & Supplies - Retail	6-10	Database Inventory	VOC, SOC
238	Automobile Repairing & Service	6-10	Database Inventory	VOC, SOC
239	General Contractors	6-10	Database Inventory	VOC, SOC
240	Automobile Dealers	6-10	Database Inventory	VOC, SOC
241	Janitors Supplies (	6-10	Database Inventory	IOC
242	Janitor Service	6-10	Database Inventory	IOC
243	Water Treatment Equipment, Service, & Supplies	6-10	Database Inventory	IOC
244	Automobile Parts & Supplies-Retail	6-10	Database Inventory	VOC, SOC
245	Veterinarians	6-10	Database Inventory	IOC
246	Automobile Dealers –	6-10	Database Inventory	VOC, SOC
247	UST site	6-10	Database Inventory	VOC, SOC
248*	Cleaners (see mapid 336)	6-10	Database Inventory	VOC, SOC
249	Boat Repairing	6-10	Database Inventory	VOC, SOC
250	Automobile Repairing & Service	6-10	Database Inventory	VOC, SOC
251	Automobile Seatcovers Tops & Upholstery	6-10	Database Inventory	VOC, SOC
252	Photographic Equipment & Supplies	6-10	Database Inventory	VOC, SOC
253	Welding Equipment & Supplies	6-10	Database Inventory	VOC, SOC
254	Bicycles – Dealers	6-10	Database Inventory	VOC
255*	Grain Elevators (see mapid 176)	6-10	Database Inventory	IOC, VOC
256	Bus Lines	6-10	Database Inventory	VOC, SOC

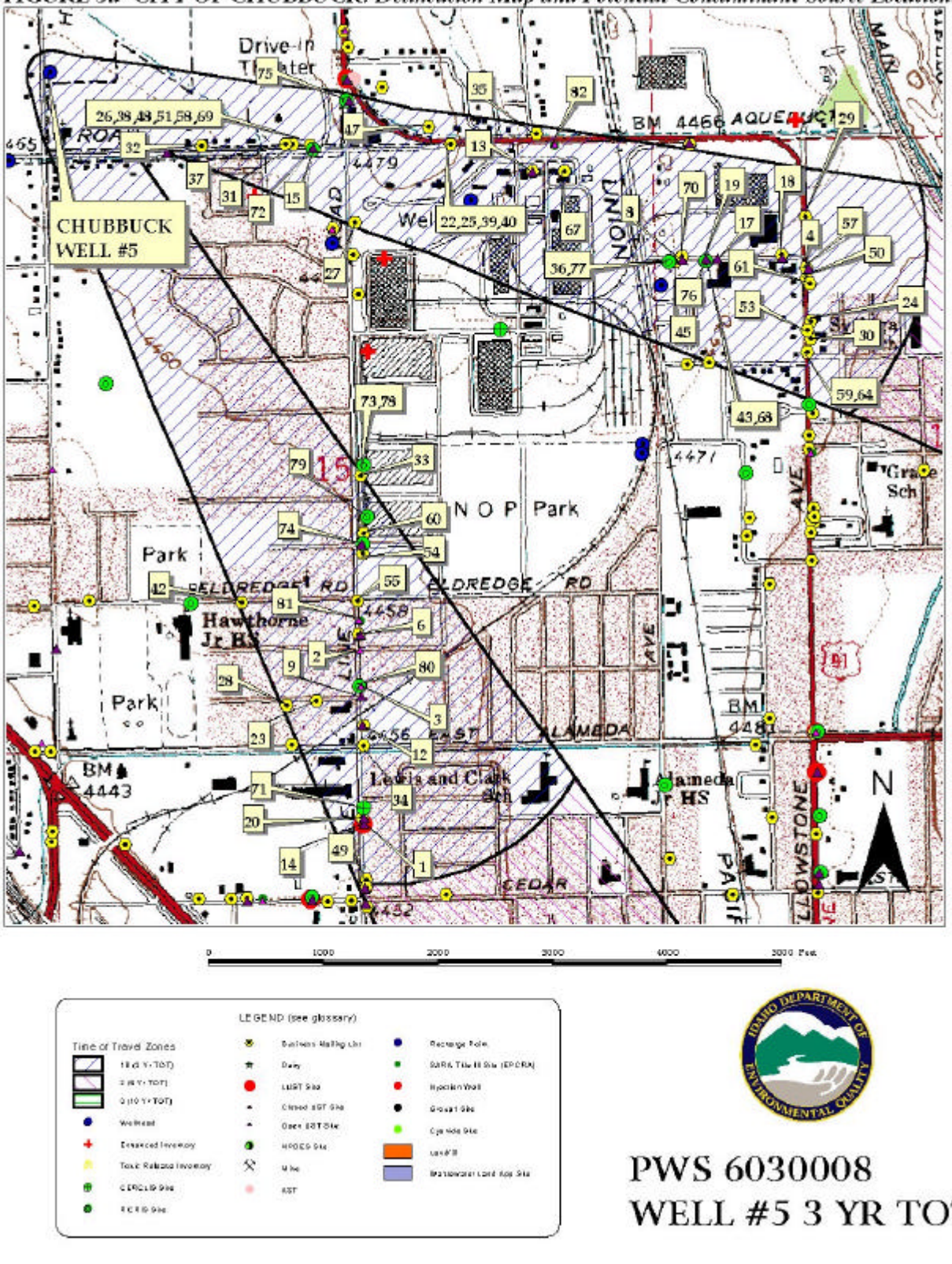
SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
257	Storage Household & Commercial	6-10	Database Inventory	IOC, VOC, SOC
258	Automobile Dealers	6-10	Database Inventory	VOC, SOC
259	Truck – Dealers –	6-10	Database Inventory	VOC, SOC
260	Janitors Supplies	6-10	Database Inventory	IOC
261	Remodeling/Repairing Building Contract	6-10	Database Inventory	VOC, SOC
262	Roofing Contractors	6-10	Database Inventory	VOC, SOC
263	Roofing Contractors	6-10	Database Inventory	VOC, SOC
264	Electric Companies	6-10	Database Inventory	IOC, VOC, SOC
265	Newspapers (Publishers)	6-10	Database Inventory	VOC
266	Woodworkers	6-10	Database Inventory	VOC, SOC
267	Automobile Repairing & Service	6-10	Database Inventory	VOC, SOC
268*	Cleaners (see mapid 342)	6-10	Database Inventory	VOC, SOC
269	Automobile Repairing & Service	6-10	Database Inventory	VOC, SOC
270	Automobile Racing Car Equipment	6-10	Database Inventory	VOC, SOC
271	Printers	6-10	Database Inventory	VOC
272	Veterinarians	6-10	Database Inventory	IOC
273	Movers	6-10	Database Inventory	VOC, SOC
274	Tire-Dealers-	6-10	Database Inventory	VOC, SOC
275	Popcorn Machines (Manufacturers)	6-10	Database Inventory	VOC
276	Printers	6-10	Database Inventory	VOC
277	Publishers – Book	6-10	Database Inventory	VOC
278	Mufflers & Exhaust Systems - Engine	6-10	Database Inventory	VOC, SOC
279	Pumps (Wholesale)	6-10	Database Inventory	VOC
280	Motorcycles & Motor Scooters-Dealer	6-10	Database Inventory	VOC, SOC
281	Industrial Equipment & Supplies)	6-10	Database Inventory	VOC, SOC
282	Woodworkers	6-10	Database Inventory	VOC, SOC
283	Movers	6-10	Database Inventory	VOC, SOC
284	Laundries	6-10	Database Inventory	IOC, VOC
285	Plumbing Fixtures & Supplies-Whole	6-10	Database Inventory	VOC
286*	Automobile Dealers- (see mapid 344)	6-10	Database Inventory	VOC, SOC
287	Laboratories-Dental	6-10	Database Inventory	IOC, Microbials
288	Plumbing Drain & Sewer Cleaning	6-10	Database Inventory	VOC
289	Photo-Sculptures	6-10	Database Inventory	VOC
290	Electric Equipment & Supplies-Wholesale	6-10	Database Inventory	VOC
291	Fire Departments	6-10	Database Inventory	VOC, SOC
292	Taxicabs	6-10	Database Inventory	VOC, SOC
293	Fire Departments	6-10	Database Inventory	VOC, SOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
294	Fire Departments	6-10	Database Inventory	VOC, SOC
295	Fire Departments	6-10	Database Inventory	VOC, SOC
296	Fire Departments	6-10	Database Inventory	VOC, SOC
297	Fire Departments	6-10	Database Inventory	VOC, SOC
298	Bus Lines	6-10	Database Inventory	VOC, SOC
299	Automobile Body-Repairing & Painting	6-10	Database Inventory	VOC, SOC
300	General Contractors	6-10	Database Inventory	VOC, SOC
301*	UST site (see mapid 203)	6-10	Database Inventory	VOC, SOC
302	Automobile Dealers-	6-10	Database Inventory	VOC, SOC
303	Roofing Contractors	6-10	Database Inventory	VOC, SOC
304	Automobile Detail & Clean-Up Service	6-10	Database Inventory	VOC
305	Printers	6-10	Database Inventory	VOC
306	Automobile Repairing & Service	6-10	Database Inventory	VOC, SOC
307	Bicycles-Dealers	6-10	Database Inventory	VOC
308	Automobile Renting & Leasing	6-10	Database Inventory	VOC, SOC
309	Roofing Contractors	6-10	Database Inventory	VOC, SOC
310	Signs (Manufacturers)	6-10	Database Inventory	VOC, SOC
311	General Contractors	6-10	Database Inventory	VOC, SOC
312	Machine Shops	6-10	Database Inventory	VOC,SOC
313	Batteries-Storage-Retail	6-10	Database Inventory	VOC, SOC
314*	UST site (see mapid 182,359)	6-10	Database Inventory	VOC, SOC
315*	Cleaners (see mapid 347)	6-10	Database Inventory	VOC, SOC
316	Car Washing & Polishing	6-10	Database Inventory	VOC
317	Mufflers & Exhaust Systems-Engine	6-10	Database Inventory	VOC, SOC
318	Oils-Essential	6-10	Database Inventory	VOC, SOC
319	Tire-Dealers-	6-10	Database Inventory	VOC, SOC
320	Automobile Seatcovers Tops & Upholstery	6-10	Database Inventory	VOC, SOC
321	Warehouses-Merchandise	6-10	Database Inventory	VOC, SOC
322*	Railroads (see mapid 190)	6-10	Database Inventory	VOC. SOC
323	Federal Government-Transportation Pr	6-10	Database Inventory	VOC, SOC
324	Government-Forestry Services	6-10	Database Inventory	VOC, SOC
325	Government-Specialty Hosp Ex Psych	6-10	Database Inventory	IOC, VOC, SOC
326	General Contractors	6-10	Database Inventory	VOC, SOC
327	Hydraulic Equipment & Supplies	6-10	Database Inventory	VOC, SOC
328	Automobile Customizing \- 6,466	6-10	Database Inventory	VOC
329	Cut Stone & Stone Products (Mfrs)	6-10	Database Inventory	VOC

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
330	Roofing Contractors	6-10	Database Inventory	VOC, SOC
331	Woodworkers	6-10	Database Inventory	VOC, SOC
332	Cleaners	6-10	Database Inventory	VOC, SOC
333	Railroad	6-10	Database Inventory	VOC, SOC
334	Water conditioning	6-10	Database Inventory	IOC
335	Mail Carrier	6-10	Database Inventory	VOC, SOC
336	Cleaners (see mapid 248)	6-10	Database Inventory	VOC, SOC
337	Manufacturing	6-10	Database Inventory	VOC, SOC
338	Local Government	6-10	Database Inventory	VOC, SOC
339	Utilities	6-10	Database Inventory	VOC, SOC
340	College Facility	6-10	Database Inventory	IOC, VOC, SOC
341	Cleaners	6-10	Database Inventory	VOC, SOC
342	Cleaners	6-10	Database Inventory	VOC, SOC
343	Environmental Services	6-10	Database Inventory	VOC, SOC
344	Auto Dealer	6-10	Database Inventory	VOC, SOC
345	Environmental Services	6-10	Database Inventory	VOC, SOC
346	Auto Repair	6-10	Database Inventory	VOC, SOC
347	Cleaners	6-10	Database Inventory	VOC, SOC
348	Warehouse-Merchandise	6-10	Database Inventory	VOC, SOC
349*	Government –Supply (see mapid 356)	6-10	Database Inventory	IOC
350	Local Business (see mapid 332)	6-10	Database Inventory	VOC
351	Auto Repair (see mapid 299)	6-10	Database Inventory	VOC, SOC
352	Copper Mine	6-10	Database Inventory	IOC, VOC
353	Sand & Gravel Mine	6-10	Database Inventory	VOC, SOC
354	Sand & Gravel Mine	6-10	Database Inventory	VOC, SOC
355	UST site (see mapid 199)	6-10	Database Inventory	VOC, SOC
356	Animal Clinic (see mapid 349)	6-10	Database Inventory	IOC
357	UST site	6-10	Database Inventory	VOC, SOC
358	Lumber (see mapid 186)	6-10	Database Inventory	VOC
359	UST site (see mapid 182,314)	6-10	Database Inventory	VOC, SOC
360	Former UST site (see mapid 184)	6-10	Database Inventory	VOC, SOC

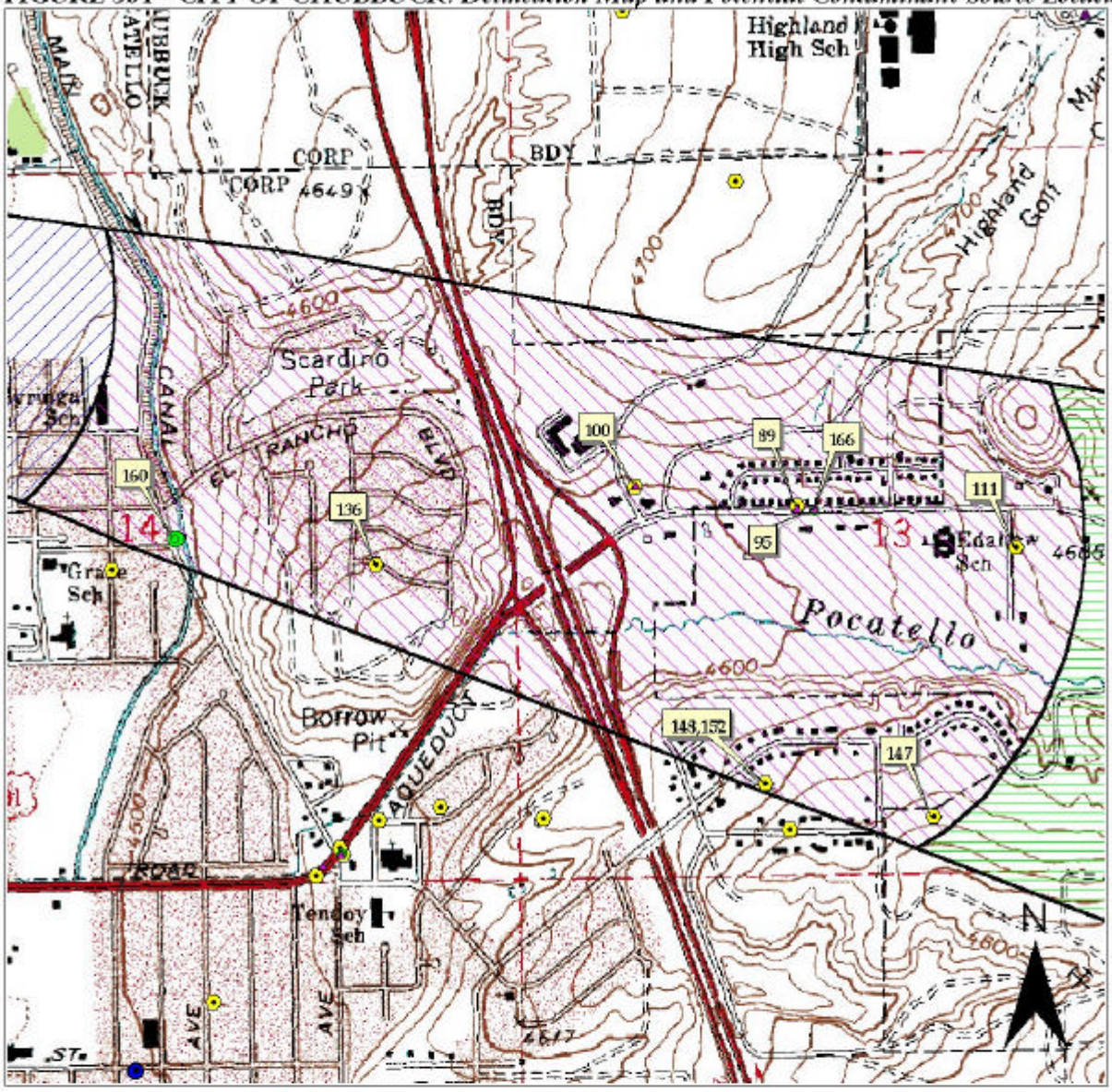
UST = underground storage tank,
TOT = time of travel (in years) for a potential contaminant to reach the wellhead
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 5a- CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



PWS 6030008
WELL #5 3 YR TOT

FIGURE 5b1 - CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



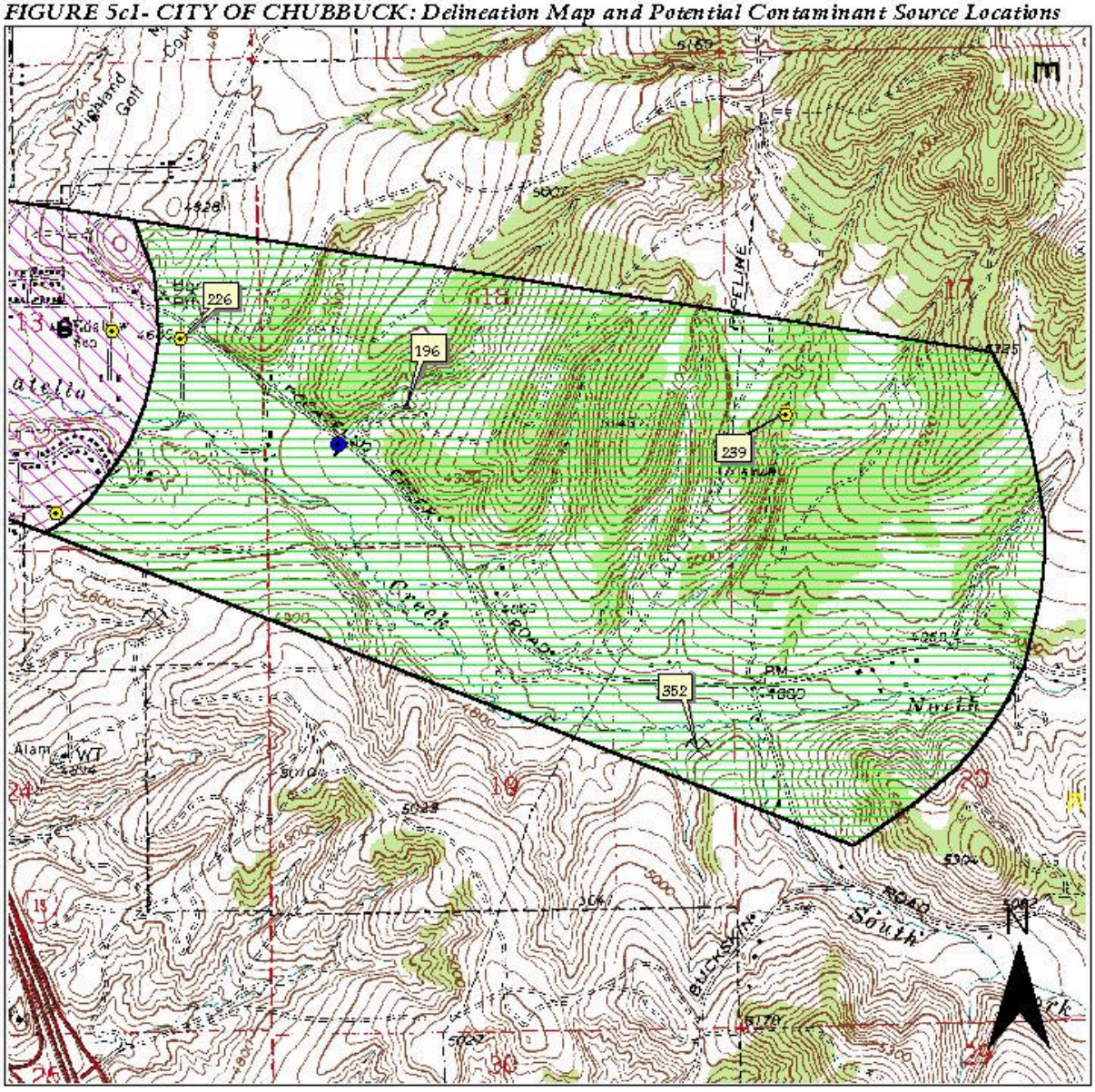
PWS 6030008
WELL #5 6 YR TOT (1)

FIGURE 5b2- CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locati

0 1000 2000 3000 4000 5000 Feet

PWS 6030008
WELL #5 6 YR TOT (2)

FIGURE 5c1- CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



PWS 6030008
WELL #5 10 YR TOT (1)

FIGURE 5c2 - CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations

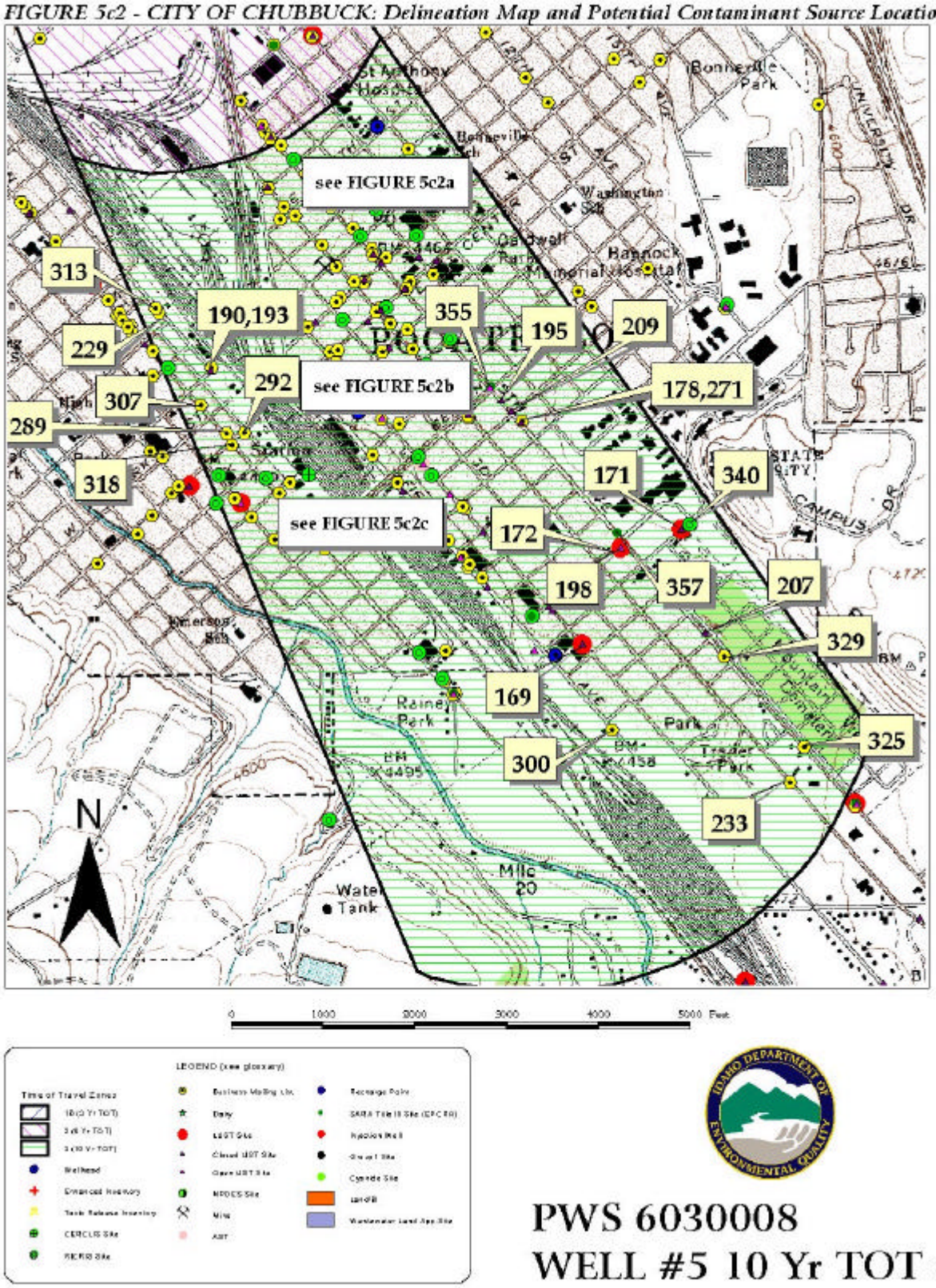
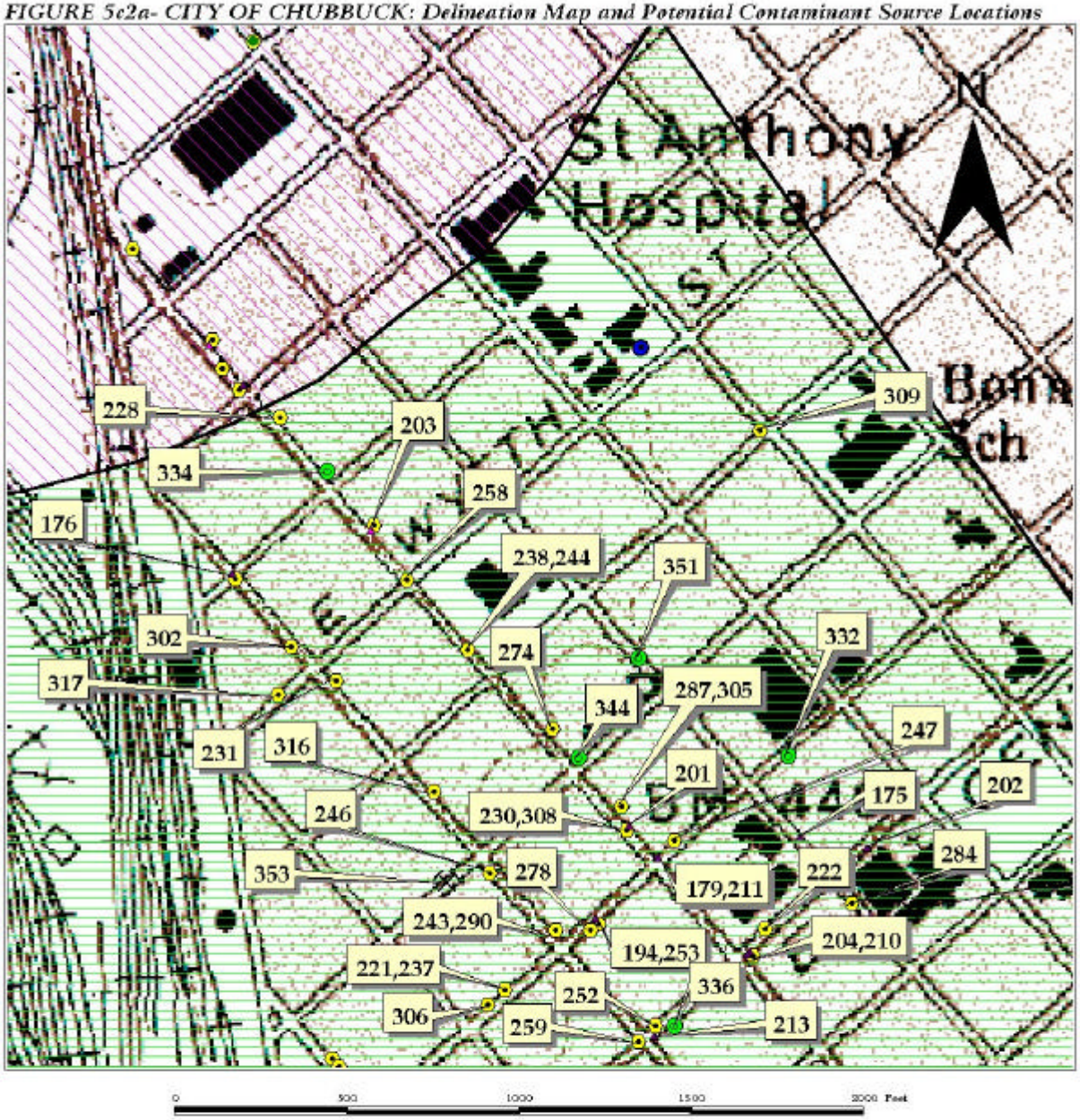
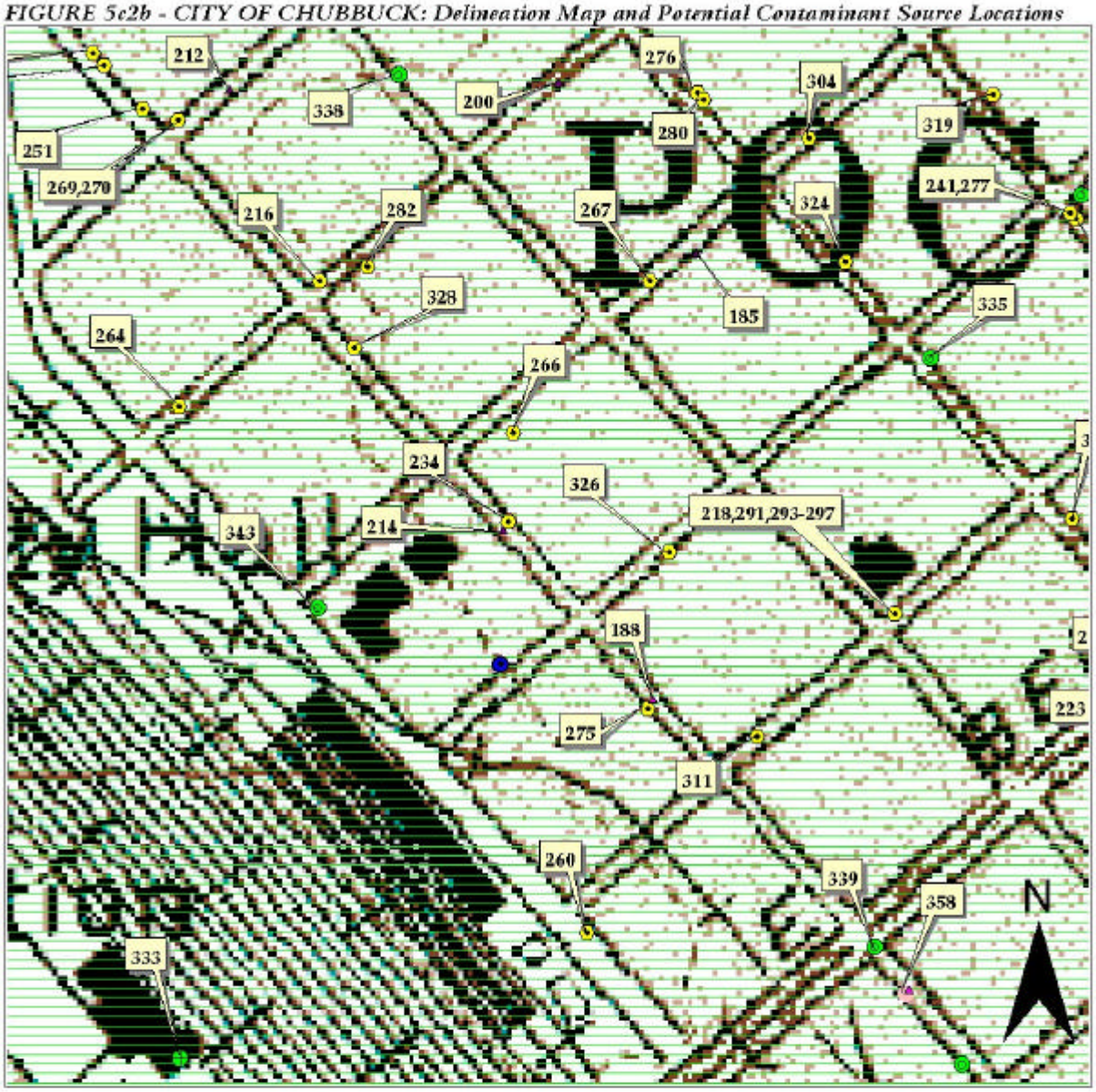


FIGURE 5c2a- CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



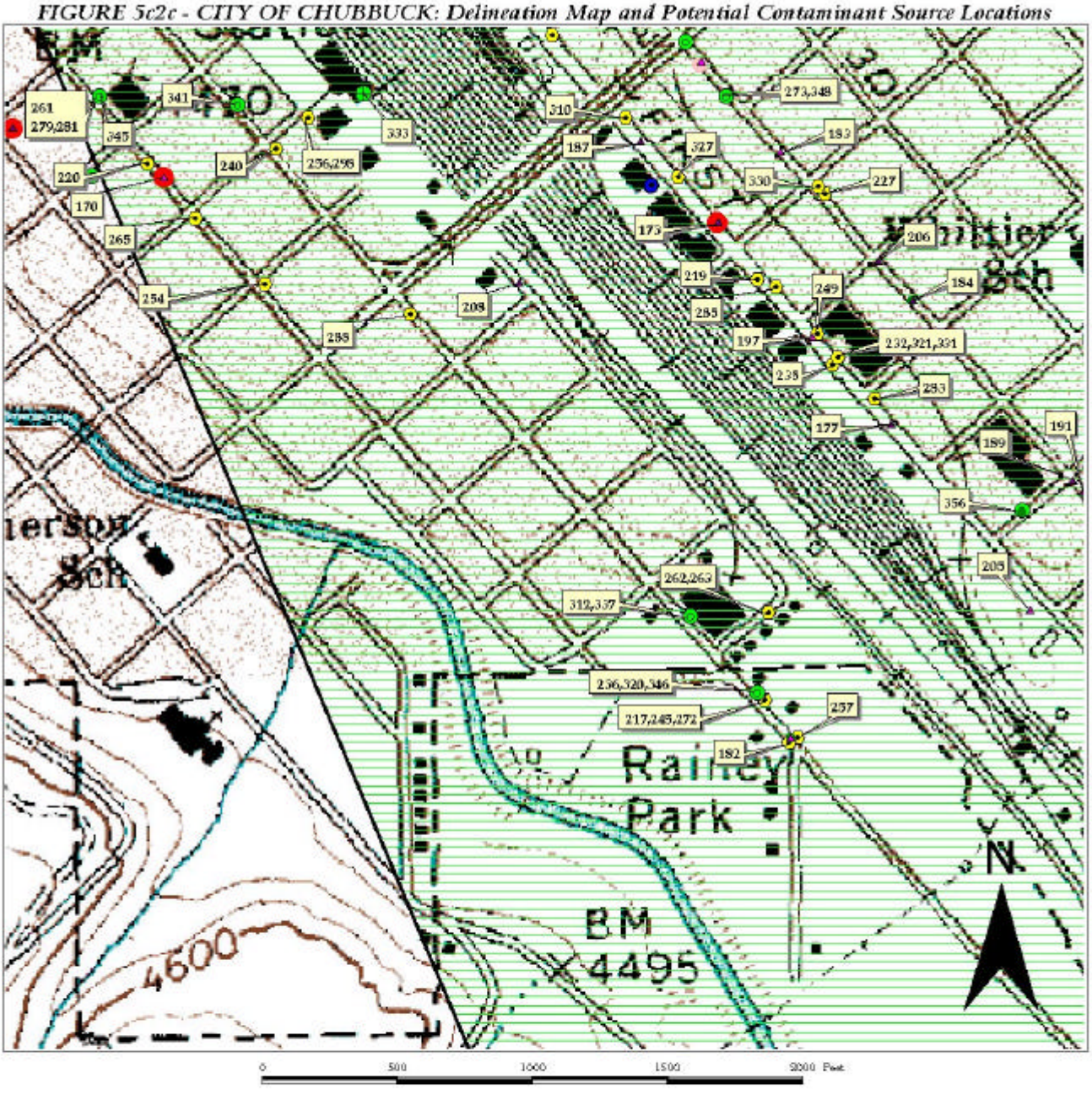
PWS 6030008
WELL #5 10 YR TOT (2)

FIGURE 5c2b - CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



PWS 6030008
WELL #5 10 YR TOT (2)

FIGURE 5c2c - CITY OF CHUBBUCK: Delineation Map and Potential Contaminant Source Locations



PWS 6030008
WELL #5 10 YR TOT (2)

Section 3. Susceptibility Analyses

The susceptibility of the wells to contamination were ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

Hydrologic sensitivity is rated low for Well #1, moderate for Well #2, Well #4, & Well #5, and high for Well #3 (see Table 6). In general, soils belonging in the moderate to well category and the vadose zone compromised primarily of gravel or fractures rock contributed to moderate or high sensitivity ratings. Information obtained from the various well logs is summarized in Table 6. Information gathered includes: 1) the drainage class for soils, 2) the make up of the vadose zone, 3) depth to first ground water greater than 300, and 4) the presence of an aquitard with silt/clay or sedimentary interbeds within basalt greater than 50 feet of cumulative thickness.

Table 6. Hydrologic Sensitivity Summary Information

Well #	Drainage Class for Soils	Make up of Vadose Zone	Depth to Ground water greater than 300 feet	Impermeable Layer with greater than 50 feet cumulative thickness
1	Poor to Moderate	Predominately clay	No	Yes
2	Moderate to Well	Predominately clay	No	Yes
3	Moderate to Well	Predominately gravel	No	No
4	Poor to Moderate	Predominately gravel	No	No
5	Poor to Moderate	Predominately gravel	No	No

Well Construction

Well construction directly affects the ability of the wells to protect the aquifer from contaminants. Lower scores imply a system that can better protect the water. Well system construction rating is low for Well #3 and moderate for Well #1, Well #2, Well #4, and Well #5 (Table 2). A 1999 sanitary survey showed that the wells were in compliance with wellhead and surface seal requirements.

Well #1 has a total depth of 305 feet. A 12-inch casing extends down 150 feet below ground surface (bgs) into a clay and gravel zone. A 10-inch casing extends down from 155 feet to 234 feet into a clay and pea gravel zone. The static water level was recorded as 90 feet in 1992 and the highest production

unit occurs from 155 to 234 feet. Well #2 has a total depth of 255 feet. A 12-inch casing extends to 150 feet into a gravel and sandy clay zone. A 10-inch casing extends from 100 feet to 250 feet into black and red cinders. The static water level was recorded as 69 feet in 1957 and the highest production unit occurs from 216 feet to 249 feet. Well #3 has a total depth of 250 feet. A 16-inch casing extends down to 160 feet into lava rock. A 12 ¾ -inch casing extends from 152 feet to 250 feet. The static water level was recorded as 70 feet in 1962 and the highest production unit occurs from 215 feet to 250 feet. Well #4 has a total depth of 400 feet. A 24-inch casing extends down to 168 feet into clay and gravel. A 20-inch casing extends from 3 feet to 201 feet into hard basalt. A16-inch casing extends from 195 feet to 400 feet into clay and conglomerate zone. The static water level was recorded as 70 feet in 1984 and the highest production unit occurs from 210 feet to 260 feet. Well #5 has a total depth of 460 feet. A 28-inch casing extends to 15 feet into gray lava rock. A 24-inch casing extends from 155 feet to 375 feet into gravels and clay. A 20-inch casing extends from 323 feet to 375 feet into gravels and clay. Static water level was recorded at 63 feet in 1996 and the highest production unit occurs at 329 feet to 449 feet. The five wells are outside the 100-year floodplain and housed in wellhouses.

The wells were given an additional point because it could not be determined from the well logs if they meet current well construction standards. The Idaho Department of Water Resources (IDWR) *Well Construction Standards Rules (1993)* require all public water systems (PWSs) to follow DEQ standards. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works (1997)* during construction. Various aspects of the standards can be assessed from well logs. Table 1 of the *Recommended Standards for Water Works (1997)* lists the required casing thickness for municipal water wells. The standards state that screen will be installed and have openings based on sieve analysis of the formation. Standard 3.2.4.1 requires all PWSs to have yield and drawdown tests that last "24 hours or until stabilized drawdown has continued for six hours at 1.5 times the design pumping rate" (Recommended Standards for Water Works, 1997).

Potential Contaminant Source and Land Use

Well #1, rated low for inorganic contaminants (IOCs) (i.e. nitrate, lead, copper), volatile organic contaminants (VOCs) (i.e. petroleum products), synthetic organic contaminants (SOCs) (i.e. pesticides) and microbial contaminants. Well #2 rated low for inorganic contaminants (IOCs) (i.e. nitrate, lead, copper), synthetic organic contaminants (SOCs) (i.e. pesticides), and microbial contaminants. The well rated moderate for (VOCs) (i.e. petroleum products) contaminants. Well #3 rated low for synthetic organic contaminants (SOCs) (i.e. pesticides) and microbial contaminants. The well rated moderate for inorganic contaminants (IOCs) (i.e. nitrate, lead, copper) and volatile organic contaminants (VOCs) (i.e. petroleum products). Well #4 rated moderate for inorganic contaminants (IOCs) (i.e. nitrate, lead, copper) and moderate for synthetic organic contaminants (SOCs) (i.e. pesticides) and high for volatile organic contaminants (VOCs) (i.e. petroleum products). The well rated low for microbial contaminants. Well #5 rated low for inorganic contaminants (IOCs) and microbial contaminants. The well rated moderate for synthetic organic contaminants (SOCs) and high for volatile organic contaminants (VOCs).

Well #1 water had PERC concentrations ranging from no detection in August 1990 to 3.8 µg/L (Maximum Contaminant Level 5.0 µg/L) in August 1991. August 1997 through June 2000, the well records no detection of PERC at the well source. Well #2 water had PERC concentrations ranging

from 3.3 µg/L in December 1990 to 19.4 µg/L in June 1997. Well # 3 water had PERC concentrations ranging from 0.8 µg/L in November 1998 to 4.2 µg/L in August 1994 and October 1997. Well #4 water had PERC concentrations ranging from 7.3 µg/L in December 1998 to 12.7 µg/L in August 1995. In 1998 a ground water treatment system was installed at the well to address the PERC problem. Post-treatment water samples record no detection of PERC (December 1998, March 1999, June 1999, and June 2000) to 0.7 µg/L (August and November 1999), and 0.9 µg/L in March 2000. For most wells, petroleum fuel storage facilities in the delineated source areas contributed the largest number of points to the contaminant inventory rating.

The Group 1 organic priority area for the volatile chemical PERC was identified because at least 25% of the local area wells have detections greater than 1% of the primary standard or other health standard. Since the City of Chubbuck's wells are located in this area, the likelihood of VOC impacts from business activities increases.

Final Susceptibility Rating

A detection above a drinking water standard Maximum Contaminant Level (MCL), any detection of a VOC or SOC, or a detection of total coliform or fecal coliform will automatically give a high susceptibility rating to the final well ranking despite the land use of the area because a pathway for contamination already exists. In this case, the final well ranking for Well #1 is low for IOC contaminants, high for VOC and SOC contaminants, and moderate for microbial contaminants. Well #2, Well #3, Well #4, and Well #5 rate moderate for IOC, and microbial contaminants, and high for VOC and SOC contaminants (Table 7).

Table 7. Summary of City of Chubbuck Susceptibility Evaluation

	Susceptibility Scores									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
Well		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
1	L	L	L	L	L	M	L	H*	H	M
2	M	L	M	L	L	M	M	H*	H	M
3	H	M	M	L	L	L	M	H*	H	M
4	M	M	H	M	L	M	M	H*	H	M
5	M	L	H	M	L	M	M	H*	H	M

H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
H* = Indicates source automatically scored as high susceptibility due to the detection of VOC (PERC) in the finished drinking water.

Susceptibility Summary

The primary drinking water issue currently facing the City of Chubbuck is the detection of PERC at the well sources. At this time, the source(s) of the PERC is unknown, however, the area is currently under investigation by the EPA. Their anticipated phased approach of the investigation will involve limited sampling at potential contaminant source and target areas for site characterization purposes.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For the City of Chubbuck, source water protection activities should continue to focus on identifying the PERC contamination source(s). The city should continue to monitor the PERC concentrations at each well source. Water samples taken from Well #4, after treatment, indicate the ground water treatment system (air stripper*)* is effective in reducing the PERC concentrations below the MCL. Any new businesses that employ potentially harmful chemicals should be monitored as well. Future well sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use. Management tools and activities can include regulatory approaches such as zoning ordinances, source prohibitions, and permits; or non-regulatory tools such as purchase of development rights or property, water conservation, and public education and information. In some cases, land uses within the source water assessment area are beyond the control of the City of Chubbuck. Therefore, partnerships with state and local agencies should be established to ensure future land uses are protective of ground water quality. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Pocatello Regional DEQ Office (208) 236-6160

State DEQ Office (208) 373-0502

Website: http://www2.state.id.us/deq

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at 1-800-962-3257 for assistance with wellhead protection strategies.

Potential Contaminant Inventory List of Acronyms and Definitions

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as "Superfund" is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

References Cited

Ecology and Environment, Inc. 1999. *Chubbuck Ground water Contamination Sampling and Quality Assurance Plan.*

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environment Managers, 1997. "Recommended Standards for Water Works."

Idaho Department of Environmental Quality. 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Environmental Quality. 1999. *City of Chubbuck Sanitary Survey*

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Welhan, J. 2000. Idaho Geologic Survey. *SWA Capture Zone Delineations, Lower Portneuf and Marsh Valleys*

Attachment A

City of Chubbuck
Susceptibility Analysis
Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : CHUBBUCK CITY OF Well#1

Public Water System Number 6030008

1. System Construction			SCORE			
Drill Date		3/21/56				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	1999			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		NO	1			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		4			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		YES	0			
Vadose zone composed of gravel, fractured rock or unknown		NO	0			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		YES	0			
	Total Hydrologic Score		1			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high		NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		YES	NO	YES	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	0	1	1	0
(Score = # Sources X 2) 8 Points Maximum			0	2	2	0
Sources of Class II or III leacheable contaminants or		YES	0	1	0	
4 Points Maximum			0	1	0	
Zone 1B contains or intercepts a Group 1 Area		YES	0	2	0	0
Land use Zone 1B	Less Than 25% Agricultural Land		0	0	0	0
	Total Potential Contaminant Source / Land Use Score - Zone 1B		0	5	2	0
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		NO	0	0	0	
Sources of Class II or III leacheable contaminants or		NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land		0	0	0	
	Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		NO	0	0	0	
Sources of Class II or III leacheable contaminants or		NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of		NO	0	0	0	
	Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0
Cumulative Potential Contaminant / Land Use Score			2	7	4	2
4. Final Susceptibility Source Score			5	6	6	6
5. Final Well Ranking			Low	Moderate	High	Moderate

Ground Water Susceptibility Report Public Water System Name : CHUBBUCK CITY OF Well#5

Public Water System Number 6030008

1. System Construction			SCORE			
Drill Date		4/17/96				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	1999			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		3			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		YES	0			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
	Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high		NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		YES	NO	YES	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	0	99	99	0
(Score = # Sources X 2) 8 Points Maximum			0	8	8	0
Sources of Class II or III leacheable contaminants or		YES	0	990	99	
4 Points Maximum			0	4	4	
Zone 1B contains or intercepts a Group 1 Area		YES	0	2	0	0
Land use Zone 1B		Less Than 25% Agricultural Land	0	0	0	0
	Total Potential Contaminant Source / Land Use Score - Zone 1B		0	14	12	0
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	0	1	0	
Land Use Zone II		Less than 25% Agricultural Land	0	0	0	
	Potential Contaminant Source / Land Use Score - Zone II		2	3	2	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		YES	1	1	1	
Sources of Class II or III leacheable contaminants or		YES	0	1	0	
Is there irrigated agricultural lands that occupy > 50% of		NO	0	0	0	
	Total Potential Contaminant Source / Land Use Score - Zone III		1	2	1	0
Cumulative Potential Contaminant / Land Use Score			5	21	17	2
4. Final Susceptibility Source Score			8	11	10	8
5. Final Well Ranking			Moderate	Moderate	High	Moderate

Ground Water Susceptibility Report Public Water System Name : CHUBBUCK CITY OF Well#3

Public Water System Number 6030008

1. System Construction			SCORE			
Drill Date		12/22/62				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	1999			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		YES	0			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		1			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		NO	2			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
	Total Hydrologic Score		6			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		IRRIGATED PASTURE	1	1	1	1
Farm chemical use high		NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		YES	NO	YES	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		1	1	1	1
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum			0	0	0	0
Sources of Class II or III leacheable contaminants or		YES	2	0	0	
4 Points Maximum			2	0	0	
Zone 1B contains or intercepts a Group 1 Area		YES	0	2	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land		2	2	2	2
	Total Potential Contaminant Source / Land Use Score - Zone 1B		4	4	2	2
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	1	1	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land		2	2	2	
	Potential Contaminant Source / Land Use Score - Zone II		5	5	4	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		NO	0	0	0	
Sources of Class II or III leacheable contaminants or		YES	1	0	0	
Is there irrigated agricultural lands that occupy > 50% of		YES	1	1	1	
	Total Potential Contaminant Source / Land Use Score - Zone III		2	1	1	0
Cumulative Potential Contaminant / Land Use Score			12	11	8	3
4. Final Susceptibility Source Score			9	9	9	8
5. Final Well Ranking			Moderate	Moderate	High	Moderate

Ground Water Susceptibility Report Public Water System Name : CHUBBUCK CITY OF Well#4

Public Water System Number 6030008

1. System Construction			SCORE			
Drill Date		6/14/84				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	1999			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		3			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		YES	0			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
	Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high		NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		YES	NO	YES	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	6	99	99	0
(Score = # Sources X 2) 8 Points Maximum			8	8	8	0
Sources of Class II or III leacheable contaminants or		YES	0	99	0	
4 Points Maximum			0	4	0	
Zone 1B contains or intercepts a Group 1 Area		YES	0	2	0	0
Land use Zone 1B	Less Than 25% Agricultural Land		0	0	0	0
	Total Potential Contaminant Source / Land Use Score - Zone 1B		8	14	8	0
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	0	1	0	
Land Use Zone II	Less than 25% Agricultural Land		0	0	0	
	Potential Contaminant Source / Land Use Score - Zone II		2	3	2	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		YES	1	1	1	
Sources of Class II or III leacheable contaminants or		YES	0	1	0	
Is there irrigated agricultural lands that occupy > 50% of		NO	0	0	0	
	Total Potential Contaminant Source / Land Use Score - Zone III		1	2	1	0
Cumulative Potential Contaminant / Land Use Score			13	21	13	2
4. Final Susceptibility Source Score			10	11	10	8
5. Final Well Ranking			Moderate	Moderate	High	Moderate

Ground Water Susceptibility Report Public Water System Name : CHUBBUCK CITY OF Well#2

Public Water System Number 6030008

1. System Construction		SCORE				
Drill Date	12/1/57					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1999				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	YES	0				
Well located outside the 100 year flood plain	YES	0				
	Total System Construction Score	3				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO	2				
Vadose zone composed of gravel, fractured rock or unknown	NO	0				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	YES	0				
	Total Hydrologic Score	3				
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	URBAN/COMMERCIAL		2	2	2	2
Farm chemical use high	NO		0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES		NO	YES	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			2	2	2	2
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		2	2	2	0
(Score = # Sources X 2) 8 Points Maximum			4	4	4	0
Sources of Class II or III leacheable contaminants or	YES		0	2	0	
4 Points Maximum			0	2	0	
Zone 1B contains or intercepts a Group 1 Area	YES		0	2	0	0
Land use Zone 1B	Less Than 25% Agricultural Land		0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B			4	8	4	0
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES		2	2	2	
Sources of Class II or III leacheable contaminants or	YES		0	1	0	
Land Use Zone II	Less than 25% Agricultural Land		0	0	0	
Potential Contaminant Source / Land Use Score - Zone II			2	3	2	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES		1	1	1	
Sources of Class II or III leacheable contaminants or	YES		0	1	0	
Is there irrigated agricultural lands that occupy > 50% of	NO		0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III			1	2	1	0
Cumulative Potential Contaminant / Land Use Score			9	15	9	2
4. Final Susceptibility Source Score			8	9	8	7
5. Final Well Ranking			Moderate	Moderate	High	Moderate